

- vi) applying a non-stick coating to the hard-anodized interior surface of the article.

Remarks

Claims 1, 4, 5 and 11 have been amended and claims 1-13, 16 and 17 are pending. Applicant submits that this application is in complete condition for allowance.

Election/Restriction

Applicants confirm the provisional election with traverse of Group I, claims 1-13 made by Applicant's representative in a telephone conversation with the Examiner on March 14, 2002. Claims 14 and 15 have been canceled without prejudice.

The Examiner asserts that the product as claimed can be made by another and materially different process. Specifically, the Examiner states that the product can be made by applying an extruded coating of porcelain enamel to the exterior of the article. Applicant believes that extrusion of a porcelain enamel coating to the article exterior is a technique representative of previous attempts to apply enamel on hard anodized surfaces that have failed. Such conventional techniques fail because an enamel coating applied to the surface, before hard anodizing the surface, is significantly degraded by the hard anodizing process, and enamel coatings applied to a hard-anodized surface do not adhere well. Applicant requests that the Examiner either document the suggested alternative process or withdraw the requirement.

Objection to the Specification

The specification stands objected to because of various informalities. Applicant has amended the specification to address each of the specific informalities that the Examiner noted. Applicant therefore requests that the objection to the specification be withdrawn.

Objection to the Claims

Claims 4, 5 and 11 stand objected to because of various informalities. Applicant has amended these claims to address each of the specific informalities that the Examiner noted. Applicant therefore requests that the objection to the claims be withdrawn.

Rejection of Claims Under 35 U.S.C. § 112

Claims 11 and 13 stand rejected under 35 U.S.C. § 112, first paragraph, because, according to the Office Action, the specification does not reasonably provide enablement for applying a second coating to the interior of the article. Claim 11 has been amended by specifying that the second coating is applied to the exterior surface to address the Examiner's objection and, therefore, Applicant requests that the rejection be withdrawn.

Claims 11 and 13 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Applicant has amended claim 11 to remove the objected-to language. Applicant therefore requests that the rejection be withdrawn.

Rejections of Claims Under 35 U.S.C. § 103

Claims 1-10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,628,426 (Doyle et al.) in view of U.S. Patent No. 5,411,014 (Paul). Claim 1 recites applying a first porcelain enamel coating to the exterior of the article, hard-anodizing the interior of the article, and applying a second porcelain enamel coating over the first coating. The Examiner concedes that Doyle et al. does not teach applying a first coating of porcelain enamel to the exterior of the article. The Examiner contends that the invention is obvious because one skilled in the art would have been motivated to modify the method of Doyle et al. by applying the first coating of porcelain enamel to the exterior of the article, because this would have made the exterior visually pleasing to look at, as taught by Paul. The Examiner further contends that the applying step could be repeated to provide the second coating of porcelain enamel as a duplication of parts. Applicant respectfully disagrees for the reasons set forth below.

Doyle et al. merely teaches hard anodizing and application of a non-stick material to the interior with polishing of the exterior surface. See column 5 lines 16 to 25. Doyle is not concerned with applying enamel coatings to the exterior surface. In addition, Doyle et al. teaches treating the exterior surface by polishing. See column 5 line 25. A coating cannot be applied to a polished surface as it would not stay on. Thus, Doyle et al. teaches away from applying a coating, such as enamel, to the exterior surface. Paul discloses application of enamel coatings, which are disclosed as being applied to the outer surface of the pan. However, Paul does not contemplate

applying an enamel coating to a hard-anodized surface. Therefore, neither reference provides a motivation or suggestion for making the suggested combination.

Even if one were to ignore the negative teaching of Doyle et al. and proceed to apply the enamel coating to the exterior surface, the coating would not be "visually pleasing." If one applied the enamel coating before hard anodizing, the coating would be seriously degraded by the anodizing process. If the enamel coating is applied after hard anodizing, it would suffer the serious problem of loss of adherence. In either sequence, the coating would not be visually pleasing.

The Examiner contends that it would be obvious to apply a second coating of porcelain and enamel over the first coating, asserting that the concept of duplication is not patentable. Applicant submits that the decision in *St. Regis Paper Co.* does not address duplication in the context of a method claim and, on that basis alone, is not a proper supporting rationale. Moreover, Applicant submits that the application of two enamel coatings, separated temporally time by a hard-anodizing process, would not be considered a common practice that requires only ordinary skill in the art and, hence, would not be considered to be a routine expedient. Claim 1 recites the application of two separate enamel coatings for overcoming the difficulty associated with applying an enamel coating to a hard anodized surface below. The application of the two separate coatings, one coating being applied before the article is hard-anodized and the other coating being applied after the article is hard-anodized, is critical to successfully coating a hard-anodized surface with enamel. Therefore, it is not appropriate for the Examiner to rely solely on *St. Regis Paper Co.* as a rationale to support the rejection.

Even if *St. Regis Paper Co.* were properly applied, Applicant submits that the method of claim 1 is not simply duplicating a mechanical part which provides, in each case, the same functionality. Claim 1 recites a series of process steps which, when carried out specifically in the claimed order, are able to realize the benefits discussed above. This is not a duplication of parts but a recognition that the conventional prejudice against applying enamel to a hard anodized surface can be overcome. Specifically, the first enamel surface is severely degraded by the hard anodizing process. This degraded surface of the first enamel surface is then used as a base for applying the second enamel coating. Further, the addition of a second coating is not remotely suggested by either Doyle et al. or Paul as neither contemplates the difficulty associated with applying an enamel coating to a hard anodized surface. There is no suggestion or motivation to combine the teachings of Paul with Doyle et al. in the suggested manner to solve a problem that does not exist with either reference.

The Examiner has failed to provide a suggestion or motivation to combine Paul with Doyle et al. Instead, the Examiner has impermissibly used hindsight to pick elements from the prior art to yield a method that allegedly renders the claimed method obvious. It is improper to use the claimed invention as a template for picking and choosing references to combine in order to render the invention obvious. The Federal Circuit has held that such a process is "illogical and inappropriate." *Sensonic, Inc. v. Aerosonic Corp.*, 81 F.3d 1566, 1570 (Fed. Cir. 1996). "The invention must be viewed not after the blueprint has been drawn by the inventor, but as it would have been perceived in the state of the art that existed at the time the invention was made." *Id.* As such, the Examiner has failed to make a *prima facie* case of obviousness. For at

least this reason, Applicant submits that claim 1, and claims 2-11 depending therefrom, are allowable and that the rejection of these claims should be withdrawn.

With regard to claim 3, Paul teaches curing at an elevated temperature, However, Paul does not teach that the elevated temperature is sufficient to at least partially remelt the surface of the first porcelain enamel coating, as recited by claim 3. In particular, Paul is does not disclose the temperature utilized, nor any such remelting effect. Therefore, claim 3 is patentable for at least this additional reason.

Claims 11 and 13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Doyle et al. in view of Paul. Independent claim 11, and claim 13 depending therefrom, are allowable for as least the same reasons discussed above with respect to independent claim 1.

Claim 12 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Doyle et al. in view of Paul. Claim 12, which depends from claim 1, is allowable for as least the same reasons discussed above with respect to independent claim 1.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment.

If there is any additional matter that may be resolved by telephone or fax, the Examiner is invited to contact the undersigned to expedite issuance of this application.

Applicant does not believe that any fees are due in connection with this submission other than the three month extension fee. However, if such petition is due

or any other fees are necessary, the Commissioner may consider this to be a request for such and charge any necessary fees to deposit account 23-3000.

Respectfully submitted,
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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Specification:

The paragraph beginning at Page 5, Line 1 has been amended as follows:

In a further aspect the invention resides in a method of forming an article of cookware of aluminium or aluminium alloy, comprising the steps of: i) providing a disc-like blank of flat metal; ii) forming the article by stamping into the desired shape; iii) applying a first coating of porcelain slip to the exterior of the article of thickness in the range 25 to 35 microns and curing at an elevated temperature to produce a hard enamel; iv) subjecting the interior surface to hard-anodizing; v) applying a second coating of porcelain slip of thickness in the range of 30 to 35 microns over the first coating and curing to produce a hard enamel; and vi) applying a non-stick coating to the hard-anodized interior surface of the article.

The paragraph beginning at Page 6, line 20 has been amended as follows:

Instead of [then immediately] subjecting the formed article to hard-anodizing directly after forming the article is first coated with a porcelain enamel. Prior to coating it is subjected to a cleansing etch by a chemical or electrochemical etching process, as is conventional in the art. A porcelain enamel is then applied to the pan body exterior wall and base. The enamel composition is conventional in comprising a frit, colour pigments, mill addition and water mixed and ground in a ballmill for a continuous period

of typically 12-14 hours. The porcelain enamel is applied as a mixture of specific viscosity of 23-25 seconds as measured by Ford cup #3 in a thickness of about 25-35 microns, more preferably 30-35 microns, and cured in a conveyor furnace. In the conveyor the article is passed through a preheat zone, a firing zone, a holding zone, and finally a cooling zone, taking typically 20 minutes to traverse the furnace. The curing starts in the firing zone, with final curing in the holding zone. A curing metal temperature of 540-555°C is utilised with a curing time of 1 to 1.5 minutes.

The paragraph beginning on Page 8, line 6 has been amended as follows:

A second porcelain coat is then applied to the exterior of the article. The same porcelain composition and viscosity are used, again in the thickness range 25-35 microns or more preferably 30-35 microns. Prior to curing, the pan can be silkscreened with any required patterns. The newly coated article is passed through a heated tunnel which includes heating means such as an LPG torch or infra-red heating to effect a rapid surface drying which creates a dry outer coat or crust. The pan base can then be subjected to the silkscreen printing. The article is then passed to the furnace conveyor for curing, at a temperature sufficient to remelt at least the surface of the first coat whereby the first and second coats bond intimately. Again a metal temperature of 540-555°C and curing time of 1 to 1.5 minutes is found to be sufficient.

In the Claims:

Claims 14 and 15 have been cancelled.

Claims 1, 4, 5, and 11 have been amended as follows:

1. (Amended) A method of surface treating a cookware article formed of aluminium or aluminium alloy, comprising the steps of:
 - a) applying a first coating of porcelain enamel to the exterior of the article;
 - b) subjecting the interior of the article to hard-anodizing after the first coating is applied; and
 - c) applying a second coating of porcelain enamel over the first coating after the interior is hard-anodized.
4. (Amended) A method according to claim 1 wherein the first porcelain enamel coating is applied as a layer of thickness in the range of 25 to 35 microns.
5. (Amended) A method according to claim 1 wherein the second porcelain enamel coating is applied as a layer of thickness in the range of 30 to 35 microns.
11. (Amended) A method of forming an article of cookware of aluminium or aluminium alloy, comprising the steps of:
 - i) providing a [disc-like] blank of flat metal;
 - ii) forming the article by stamping into the desired shape;

- iii) applying a first coating of porcelain slip to the exterior of the article of thickness in the range of 25 to 35 microns and curing at an elevated temperature to produce a hard enamel;
- iv) subjecting the interior surface to hard-anodizing after the first coating is applied and cured;
- v) applying a second coating of porcelain slip of thickness in the range of 30 to 35 microns over the first coating, after the interior surface is hard anodized and cured, and curing to produce a hard enamel; and
- vi) applying a non-stick coating to the hard-anodized interior surface of the article.